

**TOWN OF NORWOOD  
CONTRIBUTORY RETIREMENT SYSTEM**

Actuarial Valuation Report

January 1, 2004

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## Report Summary:

### Highlights

January 1, 2002

January 1, 2004

#### Contributions

Funding Schedule FY 2005	\$1,507,492	\$1,743,852
Funding Schedule FY 2006	1,565,672	2,428,043

#### Funded Ratios

GAS No. 25	94.0%	80.5%
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#### Participants

Actives	554	554
Inactives	41	41
Retirees and Beneficiaries	301	319
Disabilities	<u>45</u>	<u>49</u>
Total	941	963

#### Payroll

Payroll of Active Members	\$20,777,071	\$21,566,212
Average Payroll	37,504	38,928

#### Normal Cost

Employer	1,342,681	1,515,916
Employee	1,472,812	1,722,281
Administrative Expenses	<u>175,000</u>	<u>165,000</u>
Total	2,990,493	3,403,197

#### Actuarial Accrued Liabilities

Actives	51,585,673	55,709,355
Retirees, Beneficiaries, Disabilities and Inactives	<u>40,746,252</u>	<u>50,316,868</u>
Total	92,331,925	106,026,223

#### Actuarial Value of Assets

<u>86,804,347</u>	<u>85,399,470</u>
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#### Unfunded Actuarial Accrued Liabilities

\$5,527,578	\$20,626,753
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## **Introduction**

This report presents the Town of Norwood actuarial valuation findings as of January 1, 2004, under the Commonwealth of Massachusetts Retirement System.

The actuarial valuation is based on:

- Provisions of Chapter 32 of the Massachusetts General Laws "M.G.L.", as of January 1, 2004.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employees' Retirement Administration Commission by the Town of Norwood Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2004. It assumed the new annual cost-of-living adjustments (COLA) of 3.00%.

The valuation and forecast do not account for:

- Any other subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

**Actuarial Experience**

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last two years since the last actuarial valuation, the total unfunded actuarial accrued liability increased by 273% to \$20,626,753. The increase is the result of net unfavorable actuarial experience during the preceding years. The primary component of the unfavorable experience was an annual investment return less than the 8% assumption.

## Actuarial Costs and Liabilities:

### Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

**Table I**

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Superannuation	\$2,099,041	\$2,313,578
Death	280,157	149,307
Disability	290,287	534,691
Terminations	146,008	240,621
Administrative Expenses	<u>175,000</u>	<u>165,000</u>
Total Normal Cost	2,990,493	3,403,197
% of Pay	14.4%	15.8%
Employee Contributions	1,472,812	1,722,281
% of Pay	7.1%	8.0%
Employer Normal Cost	\$1,517,681	\$1,680,916
% of Pay	7.3%	7.8%

**Present Value of Actuarial Accrued Liabilities**

The present value of actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactive. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

**Table II**

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Actives		
Superannuations	\$45,756,228	\$51,729,749
Death	3,295,239	\$1,296,021
Disability	2,943,299	\$3,486,118
Terminations	(409,093)	(\$802,533)
Inactives		
Retirees	32,371,232	38,695,839
Disabled Retirees	8,074,359	11,306,777
Inactives	<u>300,661</u>	<u>314,252</u>
Total	\$92,331,925	\$106,026,223

### **Present Value of Future Benefits**

The present value of future benefits represents today's value of all benefits earned by the inactivees as well as all benefits earned and expected to be earned in the coming years by the activees. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

**Table III**

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Activees		
Superannuation	\$67,419,071	\$72,283,435
Death	6,150,662	2,607,147
Disability	6,199,344	8,114,807
Terminations	1,192,301	1,440,080
Inactivees		
Retirees	32,371,232	38,695,839
Disabled Retirees	8,074,359	11,306,777
Inactivees	<u>300,661</u>	<u>314,252</u>
Total	\$121,707,630	\$134,762,337



## Funded Status and Appropriations:

### Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

**Table IV**

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Cash equivalents	940,491	\$854,833
Short term investments	0	0
Fixed income securities	29,706,598	27,273,087
Equities	43,706,858	60,060,070
International	8,558,463	0
Real Estate	0	0
Venture Capital	0	0
Other	0	0
Accounts receivable	193,077	387,874
Accounts payable	(124,697)	(188,591)
Accrued income	<u>411,608</u>	<u>0</u>
Total Market Value	\$83,392,398	\$88,387,273
Total Actuarial Value	\$86,804,347	\$85,399,470

**Actuarial Value of Assets**

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8.0%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a three year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 10%.

The calculation of the actuarial value of assets as of January, 1, 2004 is presented in Table V.

**Table V**

	<u>January 1, 2004</u>
(1) Market value at January, 1, 2003	\$73,338,698
(2) 2003 Contributions	4,362,929
(3) 2003 Payments	(6,190,923)
(4) Net interest adjustment at 8.0% on (1),(2), and (3) to December, 31, 2003	5,793,976
(5) Expected market value on January, 1, 2004	\$77,304,680
(1) + (2) + (3) + (4)	
(6) Actual market value on January, 1, 2004	\$88,387,273
(7) 2003 Gain	(11,082,593)
(8) 40% of 2003 gain	(4,433,037)
(9) 2002 Loss	14,452,339
(10) 10% of 2002 loss	1,445,234
(11) Actuarial value on January, 1, 2004	
(6) + (8) + (10) but not less than 90% nor greater than 110% of (6)	\$85,399,470
(12) Ratio of actuarial value to market value	96.62%

## **Unfunded Actuarial Accrued Liabilities**

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL and the UAAL will be eliminated. Thereafter annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

**Table VI**

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Actuarial Accrued Liability	\$92,331,925	\$106,026,223
Actuarial Assets	<u>86,804,347</u>	<u>85,399,470</u>
Unfunded Actuarial Accrued Liability	\$5,527,578	\$20,626,753
Funded Status	94.0%	80.5%

## **Appropriations**

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Level amortization of the prior unfunded actuarial accrued liability by June 30, 2006  
\$ -1,547,780 over 2 years
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2028  
\$ 8,672,076 over 23 years with 4.5 % increasing payments beginning in fiscal 2006
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2028  
\$ 13,502,457 over 24 years with 4.5 % increasing payments beginning in fiscal 2006
- Interest adjustment for payments deposited at the beginning of the fiscal year.

The pension appropriation is shown in Table VII.

**Table VII**

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Normal cost	\$1,517,681	\$1,680,916
Amortization payment of the prior accrued liability	(803,655)	(803,655)
Amortization payment of prior (gains)/losses	351,624	0
Amortization payment of current (gains)/losses	<u>383,861</u>	<u>800,761</u>
Total cost	\$1,449,511	\$1,678,022
% of Pay	7.0%	7.8%
Fiscal 2005 cost	\$1,507,492	\$1,743,852
Fiscal 2006 cost	\$1,565,672	\$2,428,043

**Appropriation Forecast**

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number of employees constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 with replacement of members contributing 5%, 7%, and 8% with those contributing 9%. Payments are assumed to be spread over the fiscal year.

The employer total cost, as a percentage of payroll, is expected to fluctuate between 8% and 14% during the next 24 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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**Appropriation Forecast**  
**(amounts in thousands)**

Fiscal Year Ending	Employee Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2005	\$21,566	\$1,722	\$1,747	(\$3)	\$1,744	8.1	80.5
2006	22,537	1,824	1,800	628	2,428	10.8	80.1
2007	23,551	1,932	1,854	1,529	3,383	14.4	80.1
2008	24,611	2,046	1,910	1,598	3,508	14.3	80.9
2009	25,718	2,166	1,966	1,670	3,636	14.1	81.7
2010	26,875	2,293	2,024	1,745	3,769	14.0	82.5
2011	28,085	2,427	2,083	1,824	3,907	13.9	83.2
2012	29,349	2,568	2,144	1,906	4,050	13.8	84.0
2013	30,669	2,717	2,206	1,991	4,197	13.7	84.8
2014	32,049	2,875	2,268	2,081	4,349	13.6	85.6
2015	33,492	3,041	2,332	2,175	4,507	13.5	86.4
2016	34,999	3,216	2,398	2,273	4,670	13.3	87.2
2017	36,574	3,401	2,464	2,375	4,839	13.2	88.1
2018	38,220	3,595	2,531	2,482	5,013	13.1	88.9
2019	39,939	3,801	2,600	2,593	5,193	13.0	89.8
2020	41,737	4,017	2,670	2,710	5,380	12.9	90.7
2021	43,615	4,246	2,740	2,832	5,572	12.8	91.6
2022	45,578	4,487	2,812	2,959	5,771	12.7	92.5
2023	47,629	4,741	2,884	3,093	5,977	12.5	93.5
2024	49,772	5,008	2,957	3,232	6,189	12.4	94.5
2025	52,012	5,291	3,031	3,377	6,409	12.3	95.6
2026	54,352	5,588	3,106	3,529	6,635	12.2	96.6
2027	56,798	5,902	3,181	3,688	6,869	12.1	97.7
2028	59,354	6,232	3,257	3,854	7,111	12.0	98.9
2029	62,025	6,513	3,404	0	3,404	5.5	100.0
2030	64,816	6,806	3,557	0	3,557	5.5	100.0
2031	67,733	7,112	3,717	0	3,717	5.5	100.0
2032	70,781	7,432	3,884	0	3,884	5.5	100.0
2033	73,966	7,766	4,059	0	4,059	5.5	100.0
2034	77,294	8,116	4,241	0	4,241	5.5	100.0
2035	80,772	8,481	4,432	0	4,432	5.5	100.0
2036	84,407	8,863	4,632	0	4,632	5.5	100.0

\* Calendar basis

\*\* As of beginning of the Fiscal Year

**GAS No. 25 and GAS No. 27**

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GAS Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GAS Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to \$0. The required disclosure information is shown in Table VIII.

**Table VIII**

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
(1) Actuarial Accrued Liability	\$92,331,925	\$106,026,223
(2) Actuarial Value of Assets	<u>86,804,347</u>	<u>85,399,470</u>
(3) Unfunded Actuarial Accrued Liability	5,527,578	20,626,753
(4) Funded Ratio (2)/(1)	94.0%	80.5%
(5) Covered Payroll	\$20,777,071	\$21,566,212
(6) UAAL as a percentage of payroll: (3)/(5)	26.6%	95.6%
(7) Annual Required Contribution (ARC)	\$10,309,108	\$1,743,852
(8) Net Pension Obligation	\$0	\$0

**PERAC Annual Statement**  
**APPENDIX PAGE 3**  
**ACTUARIAL VALUATION AND ASSUMPTIONS**

The most recent actuarial valuation of the System was prepared by Mellon Human Resources & Investor Solutions as of January 1, 2004.

The normal cost for employees on that date was:	\$1,722,281	8.0% of pay
The normal cost for the employer was:	1,515,916	7.0% of pay

The actuarial liability for active members was:		\$55,709,355
The actuarial liability for retired members was:		50,316,868
Total actuarial accrued liability:		106,026,223
System assets as of that date:		85,399,470
Unfunded actuarial accrued liability:		\$20,626,753

The ratio of system's assets to total actuarial liability was		80.5%
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The principal actuarial assumptions used in the valuation are as follows:

Investment Return:		8.0%
Rate of Salary Increase:		5.5%

**SCHEDULE OF FUNDING PROGRESS**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a percent of Covered Payroll
	(a)	(b)	(b-a)	(a/b)	(c)	(b-a)/c
01/01/03	\$85,399,470	\$106,026,223	\$20,626,753	80.5%	\$21,566,212	95.6%
01/01/02	86,804,347	92,331,925	5,527,578	94.0%	20,777,071	26.6%
01/01/01	87,599,463	86,111,142	(1,488,321)	101.7%	19,809,847	-7.5%
01/01/00	85,512,125	81,499,708	(4,012,417)	104.9%	19,086,827	-21.0%
01/01/99	77,388,198	74,689,703	(2,698,495)	103.6%	16,923,528	-15.9%
01/01/97	64,093,721	63,025,327	(1,068,394)	101.7%	15,969,602	-6.7%

Attach Copy of Current Approved Funding Schedule



## **EXHIBITS**

## Age/Service Distribution with Salary as of January 1, 2004

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
20-24	3	0	0	0	0	0	0	0	0	0	3
	24,468	0	0	0	0	0	0	0	0	0	24,468
25-29	23	1	0	0	0	0	0	0	0	0	24
	32,990	44,320	0	0	0	0	0	0	0	0	33,462
30-34	19	5	0	0	0	0	0	0	0	0	24
	36,712	49,377	0	0	0	0	0	0	0	0	39,350
35-39	19	6	16	6	0	0	0	0	0	0	47
	24,511	48,415	51,243	60,488	0	0	0	0	0	0	41,256
40-44	42	7	10	19	5	0	0	0	0	0	83
	25,753	31,009	45,825	50,818	44,557	0	0	0	0	0	35,485
45-49	42	16	13	15	24	2	0	0	0	0	112
	24,586	24,127	53,292	55,892	61,545	64,608	0	0	0	0	40,679
50-54	29	15	19	9	8	19	4	0	0	0	103
	28,046	27,114	30,863	45,492	60,557	61,774	52,714	0	0	0	39,659
55-59	18	18	16	15	9	5	6	1	0	0	88
	28,617	34,054	34,348	42,739	42,213	77,139	67,004	34,528	0	0	40,010
60-64	11	5	8	10	5	6	3	4	0	0	52
	24,252	41,601	29,418	32,669	34,664	51,470	68,089	59,614	0	0	37,725
65-69	2	2	0	4	2	0	2	0	1	0	13
	48,728	35,298	0	24,244	46,115	0	25,370	0	52,540	0	35,426
70+	0	1	0	0	0	2	3	1	0	0	7
	0	11,526	0	0	0	37,979	15,799	7,811	0	0	20,385
Total Employees	208	76	82	78	53	34	18	6	1	0	556
Average Salary	27,896	32,824	40,759	46,680	53,392	60,982	50,849	46,799	52,540	0	38,547

## Retiree Distribution as of January 1, 2004

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	0	1	1	0	5,967	5,967
50-54	2	1	3	63,770	37,042	100,812
55-59	10	11	21	261,213	137,198	398,411
60-64	16	12	28	474,077	116,829	590,906
65-69	21	18	39	531,331	234,623	765,954
70-74	24	30	54	459,071	347,588	806,659
75-79	37	35	72	705,869	306,026	1,011,894
80-84	21	35	56	294,633	306,333	600,965
85-89	8	15	23	60,657	115,390	176,048
90-94	6	10	16	75,005	76,239	151,244
95-99	4	2	6	34,534	5,299	39,833
Total	149	170	319	2,960,160	1,688,534	4,648,694
Average (Age/Payment)	74.5	76	75.3	19,867	9,933	14,573
Frequency Percent	46.7	53.3	100	63.7	36.3	100

## Disabled Retiree Distribution as of January 1, 2004

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	35816	0	35816
40-44	1	1	2	34142	34507	68649
45-49	3	0	3	77,161	0	77,161
50-54	5	1	6	180,938	13,345	194,283
55-59	9	0	9	237,459	0	237,459
60-64	6	0	6	127,714	0	127,714
65-69	4	0	4	92,953	0	92,953
70-74	8	0	8	152,268	0	152,268
75-79	4	0	4	85,731	0	85,731
80-84	2	0	2	24,669	0	24,669
85-89	4	0	4	61,028	0	61,028
90-94	0	0	0	0	0	0
95-99	0	0	0	0	0	0
Total	47	2	49	1,109,880	47,852	1,157,732
Average (Age/Payment)	65	47.7	64.3	23,614	23,926	23,627
Frequency Percent	95.9	4.1	100	95.9	4.1	100

**EXHIBIT 4 - CASHFLOW FORECAST:**

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2004	\$6,035	\$1,722	\$1,744	\$6,623	\$4,054
2005	6,359	1,824	2,428	6,962	4,855
2006	6,707	1,932	3,383	7,374	5,982
2007	7,074	2,046	3,508	7,844	6,324
2008	7,500	2,166	3,636	8,338	6,640
2009	7,941	2,293	3,769	8,858	6,979
2010	8,409	2,427	3,907	9,404	7,329
2011	8,915	2,568	4,050	9,977	7,680
2012	9,451	2,717	4,197	10,578	8,041
2013	9,977	2,875	4,349	11,207	8,454
2014	10,534	3,041	4,507	11,869	8,883
2015	11,150	3,216	4,670	12,564	9,300
2016	11,769	3,401	4,839	13,292	9,763
2017	12,372	3,595	5,013	14,058	10,294
2018	13,011	3,801	5,193	14,866	10,849
2019	13,653	4,017	5,380	15,719	11,463
2020	14,215	4,246	5,572	16,624	12,227
2021	14,719	4,487	5,771	17,593	13,132
2022	15,245	4,741	5,977	18,634	14,107
2023	15,774	5,008	6,189	19,754	15,177
2024	16,232	5,291	6,409	20,963	16,431
2025	16,633	5,588	6,635	22,275	17,865
2026	17,005	5,902	6,869	23,704	19,470
2027	17,311	6,232	7,111	25,264	21,296
2028	17,486	6,513	3,404	26,816	19,247
2029	17,585	6,806	3,557	28,358	21,136
2030	17,645	7,112	3,717	30,053	23,237
2031	17,649	7,432	3,884	31,919	25,586
2032	17,602	7,766	4,059	33,975	28,198
2033	18,193	8,116	4,241	36,215	30,379

amounts in thousands

## EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2004, and does not take into account any subsequent changes.

### 1. Administration

Each of the 107 contributory retirement systems for public employees for the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

### 2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporaries, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

### 3. **Salary**

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

### 4. **Member Contributions**

Member contributions vary depending upon date hired as follows:

<b><u>Date of Hire</u></b>	<b><u>Member Contribution Rate</u></b>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary

Members hired on or after January 1, 1979 contribute an additional 2% of compensation in excess of \$30,000.

### 5. **Average Salary**

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

### 6. **Creditable Service**

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

## **7. Service Retirement**

### **a. Eligibility:**

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions are to be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service
- (iv) if an employee is a State police officer (Group 3), attainment of age 50



b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

For Group 3 (State police), the benefit is 50% of the participant's final year's rate of regular salary, plus an additional 1% for each year of service in excess of 20 years. In addition, for veterans (all groups) there is an additional benefit of \$15 per year for each year of service, up to a maximum of 20 years of service.

## **8. Deferred Vested Retirement**

### **a. Eligibility:**

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

### **b. Benefit Amount:**

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

### **c. Refund of Contributions:**

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

## **9. Accidental Disability**

### **a. Eligibility:**

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

### **b. Benefit Amount:**

The accidental disability amount is 72% of annual salary plus \$450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

**10. Ordinary Disability****a. Eligibility:**

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

**b. Benefit Amount:**

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

**11. Survivor Benefits****a. Occupational Death:**

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

**b. Non-Occupational Death:**

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$250 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$250 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

**12. Cost-of-Living Increases**

In accordance with the adoption of Chapter 17 of the Acts of 1997 the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum pension benefit on which a COLA may be granted is \$12,000. All COLA's granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

**13. Postretirement Death Benefits**

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A – Life annuity
- (ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

## EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

### 1. **Member Data**

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

### 2. **Valuation Date**

January 1, 2004.

### 3. **Actuarial Cost Method**

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

### 4. **Rate of Investment Return**

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.00% per annum.

### 5. **Salary Scale**

It is assumed that salaries including longevity will increase at a rate of 5.5% per year.

### 6. **Cost-of-Living Increases**

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$12,000 per year.

**7. \$30,000 Pay Cap**

The \$30,000 salary cap no longer applies for purposes of benefit determination.

**8. Value of Investments**

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). The actuarial value is based on a 5 year smoothing of realized and unrealized investment earnings greater than or less than the expected return.

**9. Annual Rate of Withdrawal Prior to Retirement**

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

**10. Annual Rate of Mortality**

It is assumed that both preretirement and postretirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward three years for male disabled members and zero years for female disabled members.

## 11. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.0120	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

**12. Annual Rate of Disability Prior to Retirement**

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

<b><u>Attained Age</u></b>	<b><u>General Employees</u></b>	<b><u>Police and Fire Employees</u></b>
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

**13. Family Composition**

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

**14. Administrative Expenses**

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for calendar year 2004 is \$165,000 and is anticipated to increase at 4.5% per year.



## EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

### 1. **Actuarial Accrued Liability**

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

### 2. **Actuarial Assumptions**

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

### 3. **Actuarial Cost Method**

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

### 4. **Actuarial Present Value**

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

### 5. **Forecast**

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

**6. Normal Cost**

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

**7. Unfunded Actuarial Accrued Liability**

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

**8. Valuation Method**

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

**9. Vested Liability**

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

## **CERTIFICATION:**

This report fairly represents the actuarial position of the Town of Norwood Contributory Retirement System contributing as of January 1, 2004, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost is reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Mellon's Human Resources & Investor Solutions

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Daniel W. Sherman, ASA, MAAA  
Enrolled Actuary No. 02-4086

April, 2004

## Norwood Retirement System

### Forecasted Valuation Results

	Actual <u>January 1, 2004</u>	Estimated <u>January 1, 2005</u>
<u>Contribution Results</u>		
Current Schedule - FY06	\$2,428,043	\$1,975,000
Current Schedule - FY07	\$3,383,320	\$2,925,000
<u>Actuarial Accrued Liability</u>	106,026,223	111,050,000
<u>Actuarial Value of Assets</u>	<u>85,399,470</u>	<u>93,169,426</u>
<u>Unfunded Actuarial Accrued Liability</u>	\$20,626,753	\$17,880,574
<u>Funded Ratio</u>		
Actuarial Cost Method	80.5%	83.9%
<u>Normal Cost</u>		
Employer	\$1,515,916	\$1,550,000
Employee	1,722,281	1,750,000
Administrative Expenses	<u>165,000</u>	<u>175,000</u>
Total	\$3,403,197	\$3,475,000
<u>Participants</u>		
Actives	554	554
Inactives	41	41
Retirees, Beneficiaries, and Disabled retirees	<u>368</u>	<u>368</u>
Total	963	963
<u>Payroll of Active Participants</u>		
Total	\$21,566,212	\$22,000,000
Average	\$38,928	\$39,711